

CHAPTER
1 Earth as a System

VOCABULARY

atmosphere

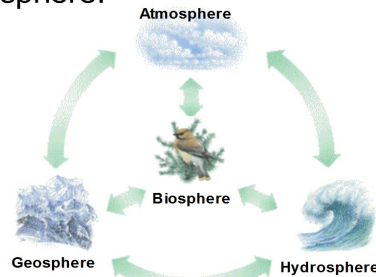
geosphere

hydrosphere

biosphere

1.2 The Earth System's Four Spheres

The Earth system includes four spheres: the atmosphere, geosphere, hydrosphere, and biosphere.



use magic
ink to
uncover the
spheres

The atmosphere is the gaseous envelope surrounding Earth.
Earth's water makes up the hydrosphere.

The geosphere consists of all the physical features on Earth except water.

Living things, including plants, animals, and people, make up the biosphere.

The spheres interact and change constantly.



Rock formations can result from interactions among the four spheres.

On the left page of your notebooks explain this diagram

Draw a line to match the term to the definition

~~atmosphere~~

~~biosphere~~

~~geosphere~~

~~hydrosphere~~

All water in the Earth system—gaseous, solid, and liquid

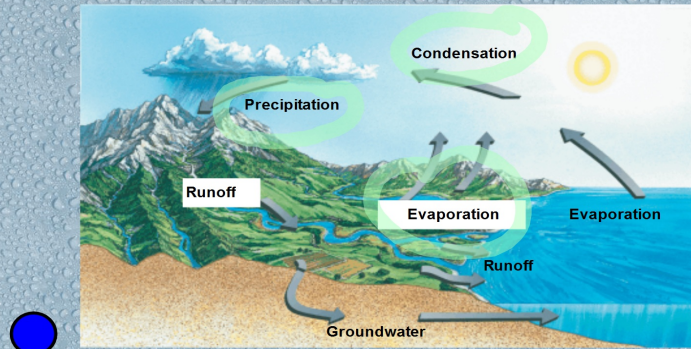
The gaseous envelope of air surrounding Earth, made up of a mixture of nitrogen, oxygen, other gases and water vapor

All living organisms in the Earth system and their environments

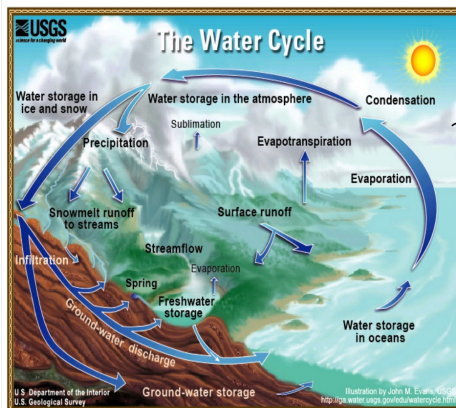
The rocks, mountains, lithospheric plates, and other physical features of Earth, except for water

1.3 Cycles and the Earth

All water on Earth is continually moving through the water cycle, which includes evaporation, transpiration (evapotranspiration), and precipitation.



Which spheres of the Earth are interacting in the water cycle?
How are they interacting?



hydro : atmosphere
 - water evaporates from the ocean
 - water rains into river

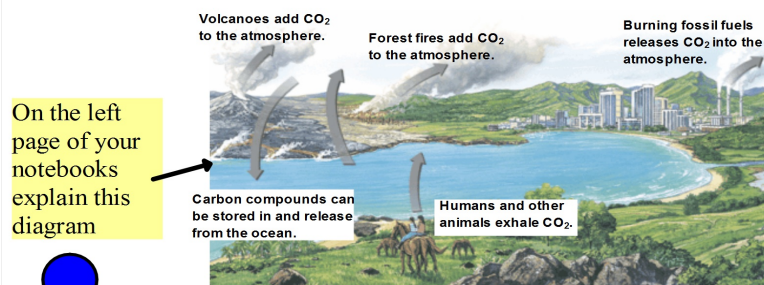
geo + hydro
 - water runs down mts.
 - snow caps

bio + hydro
 - drink water
 - plant suck up water

to + Atmos fraction

1.3 Cycles and the Earth

A biogeochemical cycle involves the movement of an element, such as carbon, through the four spheres of the Earth system.

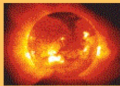




On the left page of your notebooks explain this diagram

Work on the biogeochemical Cartoon and Study guide.

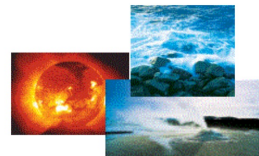
1.3 Cycles and the Earth

The energy cycle of the Earth system has three main energy sources: solar energy, geothermal energy, and tidal energy.

Sources of Earth's Energy			
			
Type of Energy	Solar	Geothermal	Tidal
% of Total Energy	99.895	0.013	0.002

Drag the parts to complete the table

Geothermal
Solar
Tidal



Sources of Earth's Energy			
Type of Energy			
% of Total Energy	0.002	0.013	99.895

carbon cycle

energy cycle

evapotranspiration

solar energy

tidal energy

water cycle

geothermal energy

Drag the term to the definition

Energy created by the gravitational pull of the sun and moon on Earth's oceans.

The movement of energy into and out of the Earth system.

Heat energy that originates from within Earth and drives the movement of Earth's tectonic plates.

The continuous circulation of water through the hydrosphere as solid, liquid, or gas.

Energy emitted by the sun.

The rapid cycling of water vapor into the atmosphere by evaporation from Earth's surface or transpiration from plant leaves.

The biogeochemical circulation of carbon through the Earth system.

CHAPTER

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Earth as a System

VOCABULARY

atmosphere

The gaseous envelope of air surrounding Earth, made up of a mixture of about 78 percent nitrogen, 21 percent oxygen, and 1 percent other gases and water vapor; one of the four spheres of the Earth system.

geosphere

The rocks, mountains, lithospheric plates, and other physical features of Earth, except for water; one of the four spheres of the Earth system.

CHAPTER

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Earth as a System

VOCABULARY

hydrosphere

All water in the Earth system—gaseous, solid, and liquid; one of the four spheres of the Earth system.

biosphere

All living organisms in the Earth system and their environments; one of the four spheres of the Earth system.

VOCABULARY

cycle

The physical or chemical processing of Earth materials that repeats over time, for example, the water cycle, carbon cycle, and rock cycle.

water cycle

The continuous circulation of water through the hydrosphere as solid, liquid, or gas.

evapotranspiration

The rapid cycling of water vapor into the atmosphere by evaporation from Earth's surface or transpiration from plant leaves.

carbon cycle

The biogeochemical circulation of carbon through the Earth system.

VOCABULARY

energy cycle

The movement of energy into and out of the Earth system.

geothermal energy

Heat energy that originates from within Earth and drives the movement of Earth's tectonic plates.

solar energy

Energy emitted by the sun.

tidal energy

Energy created by the gravitational pull of the sun and moon on Earth's oceans.